

This question paper contains 4 printed pages.]

6598

Your Roll No.

B.Sc. (Hons.) Computer Science/V Sem. B
Paper - 503 MICROPROCESSORS
(Admissions of 2011 and onwards)

Time : 3 Hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Answer All questions.

Parts of a question should be attempted together.

1. (a) Describe segment registers used in the 8086 microprocessor. 4
- (b) What is the purpose of the TLB located within the 80486 microprocessor ? 2
- (c) Determine the memory location addressed by the following real mode pentium 4 register combinations : 4
 - (i) SS = 8000 H and ESP = 00009000 H
 - (ii) DS = 1239 H and EDX = 0000A900 H

[P.T.O.]

2. (a) How is the instruction MOV CL, DS; [1234 H] is different from MOV AL, DS : [1234 H] 2
- (b) How many bytes of memory are used in for direct jump instruction ? What is stored in each of the bytes ? 3
- (c) If EAX = 00001000 H, EBX = 00002000 H and DS = 0010 H. Determine the address accessed by following instruction, assuming it a real mode instruction : 4
- (i) MOV [EAX + 2 + EB x], CL
- (ii) MOV ECX, [EAX + EBX]
3. (a) Write a short sequence of instructions that transfer data from a data segment memory array (ARRAY) to as I/O device at I/O address 3ACH. 5
- (b) Differentiate between :- 4
- (i) MOVSX and MOVZX
- (ii) LEA SI, DATAI and MOV SI, OFFSET DATA
4. (a) Write a near procedure to find out the cube of the contents of the CX register. 4
- (b) What is vector table ? Explain the operations of following instructions : 1+3=4
- (i) INT 3
- (ii) INT 0

- (c) Which conditional jump instruction test both the Z and C flag bits ? 2
5. (a) What are the purposes of the status bits S3 and S4 in 8086 / 8088 microprocessor ? 3
- (b) What is the purpose of the demultiplexed $\overline{\text{BHE}}$ signal on the 8086 microprocessor ? 2
- (c) Explain the operations of the 8284 A clock generator ? 4
6. (a) Discuss two methods of interfacing I/O to the microprocessor ? 4
- (b) Why $\overline{\text{BLE}}$ and $\overline{\text{BHE}}$ pins have no functions while selecting 16-bit wide I/O devices ? 3
7. (a) List the events that occur when a real mode interrupt become active to 8086 micro processor ? 3
- (b) How are IF and TF flags are cleared and set in 8086 microprocessor ? 4
- (c) What are the purposes of IR7-I/O pins of 8259 A programmable interrupt controller ? 2

8. (a) Discuss three software commands used to control the operations of the 8237 DMA controller. 3
- (b) Describe the purpose of following pins of 8289 bus arbiter. 6
- (i) $S_0 - S_2$
 - (ii) \overline{BUSY}
 - (iii) \overline{LOCK}
- (c) Describe the Internal structure of the pentium pro-microprocessor. 3